4.9 CULTURAL RESOURCES

This section describes the existing archaeological, historical, and sacred sites and resources within the proposed Project area and identifies potential impacts on them during all phases of the Project. Concerns raised during the public scoping period about the Alaska Airlines Flight 261 crash site are addressed here. This section also details mitigation measures for any potential impacts and evaluates the effects of proposed alternatives on cultural resources relative to the Project. Information is incorporated from the cultural resources report prepared for BHP Billiton LNG International, Inc. (BHPB) by Entrix (2004a; 2004b) and an underwater cultural resources survey report prepared by Fugro Pelagos, Inc. (Hunter 2004).

4.9.1 Environmental Setting

4.9.1.1 Cultural Resource Definitions

As a class of resources considered in planning for and assessing impact from major developments, cultural resources may include prehistoric and historic archaeological sites; artifacts of aboriginal, Spanish, Mexican or American origin; or any other physical evidence associated with human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reason (McGimsey and Davis 1971). Cultural resources may be of Federal, State, or local significance.

To be evaluated as a significant cultural resource at the Federal and State levels, a resource must retain integrity (the degree of preservation of each class of cultural materials present in the resource) and satisfy one of the following conditions: be associated with a nationally, regionally, or locally important event; be associated with a nationally, regionally, or locally important person; be a good example of a period or style or represents a work of a master craftsman; or have potential to provide data important for addressing major research questions; and, in most instances, be older than 50 years of age. Local significance criteria generally follow State and Federal criteria with emphasis on local importance.

A unique archaeological resource is defined in the State Public Resources Code as “an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: contains information needed to answer important research questions and that there is a demonstrable public interest in that information; has a special and particular quality such as oldest of its type or best available example of its type; is directly associated with a scientifically recognized important prehistoric or historic event or person.”

Archaeological resources in the Project area are associated with either Native American or Euro-American occupation of the area. The most frequently encountered prehistoric and early historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, more briefly occupied sites where tools were

manufactured or repaired; and special-use areas such as caves, rock shelters, and sites of rock art. Euro-American sites may include structural foundations or features such as privies, corrals, and trash dumps.

Cultural resource impacts also include impacts on Native American values. A significant impact on Native American values consists of any adverse effect on a prehistoric or historic archaeological site or resource of ethnic/cultural significance. Contemporary Native American resources or ethnographic resources may include archaeological resources, rock art, and prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the persistence of their traditional values.

Archaeological sites and artifacts occur both onshore and offshore and, by their nature, are non-renewable resources.

4.9.1.2 Background Information

Prehistory

Ventura County, Oxnard

The first evidence of human occupation appears circa 9,000 years before the present (B.P.), but the prehistorical record generally begins 1,000 years later. Humans may have occupied the region earlier than 9,000 B.P., but no evidence of human presence during that period has been identified in Ventura County to date. The prehistory of the Ventura County region is divided into three periods: Early (8,000 to 3,350 B.P.), Middle (3,350 to 800 B.P.), and Late (800 to 150 B.P.).

Remains from the Early Period generally include grinding implements and large flake and core tools (Macko et al. 1985:18; Allen 1982:12-13; Leonard 1971:118), and Early Period sites appear to represent remains of residential base camps usually located on hilltops or knolls. Middle Period artifacts typically include more diversified and advanced tools as well as arrowheads and shell ornaments. Villages of this period were more permanently occupied and some satellite sites became differentiated in size and purpose. Trade between villages is evidenced by the presence of trade materials such as serpentine, steatite, fused shale, and obsidian in village sites. Greater mortuary data from this period exist than for the Early Period. An increase in the importance of ocean resources and in the construction and use of boats is documented.

The Late Period is marked by a dramatic increase in population and the emergence of a culture ancestral to the Chumash culture. The historical record from this period shows hunting and fishing tools, pottery vessels, trade items, ornaments, shell middens, and standardized shell bead money. Religion and mortuary rites increased in importance and complexity (Wessel, Edberg and Singer 1981:17). Villages ranged from 25 to 1,500 persons (Singer 1977, in Dames & Moore 1988).

The Chumash culture attained a level of socio-cultural complexity and a population density comparable to many agricultural societies, as evidenced by the remains of the

large villages (Pastron, Wells and Clewlow 1978:19). Geographically, the Chumash occupied the territory along the Pacific Coast from San Luis Obispo south to Malibu Canyon and inland as far as the western edge of the San Joaquin Valley, as well as the Channel Islands of San Miguel, Santa Rosa, Santa Cruz, and Anacapa.

The Ventureno Chumash were the southernmost Chumash group and occupied what is today the southwest corner of Los Angeles County and all but the northwest and easternmost parts of Ventura County. Maritime technology featured planked wood boats, harpoons, fishnets, and shell and bone fishhooks (Grant 1978b: 517). Chumash manufacture of wooden implements, basketry, cordage, and shell and bone ornaments is well documented (Dames & Moore 1988:2-11). Food processing items included the mortar and pestle, wood and stone bowls, baskets, and steatite griddles. Rock art sites occur throughout Chumash territory.

The Chumash were the first major California Indian group to be encountered by Europeans; Cabrillo met them in 1542 near present-day Ventura.

The ethnographic record on the Chumash is incomplete, a fact that reflects their rapid acculturation/enculturation into the Spanish mission system as well as the socio-religious bases of the missionaries who did not recognize Chumash culture as worthy of preservation.

Santa Clarita/Newhall

Native American groups known as the Alliklik and Tataviam are known to have utilized the upper Santa Clara River Valley. These groups traded extensively with the Ventureno and other Chumash, and the eastern Serrano and Mojave groups.

The Tataviam lived primarily on the upper reaches of the Santa Clara River drainage east of Piru Creek, although their territory extended over the Sawmill Mountains to the north to include at least the southwestern fringes of the Antelope Valley. Tataviam territory was bounded on the west by various Chumash groups. The core of the Tataviam region is the south-facing slopes of the Liebre and Sawmill mountains.

The upper Santa Clara River and Antelope Valley were inhabited as early as 8,000 to 3,000 B.P. Associated artifacts include tools used in seed processing. Middle Period sites in the area are common and often contain ovens for roasting yucca. Transition from the Middle to Late periods shows an increase in social differentiation and economic complexity.

On the basis of archaeological and ethno-historic information, Tataviam villages appear to have varied in size from large centers with as many as 200 people to small settlements containing 10 to 15 people.

Euro-American History

Ventura County/Oxnard

The Spanish fleet first explored the region in the 16th century beginning with the Cabrillo voyage and its 1542 landing near Point Magu in Ventura County. Expeditions by land and sea continued through the mid-18th century. European settlement in southern California initially focused on the establishment of missions, pueblos, and presidios in the period dating between 1769 and 1821.

By the early 1800s, most of the Chumash population had come under the control of the Mission system. One-quarter of all the California Franciscan Missions were located in Chumash territory (Grant 1978a: 506; Dames & Moore 1988:2-10). European colonization effectively ended the traditional Chumash lifestyle. By 1900 very few full-blooded Chumash remained.

During the rancho period, which lasted from 1822 to 1847, Mexico achieved its independence from Spain, and thousands of Mexican immigrants entered southern California in order to take advantage of new land grants designed to settle and develop the area. The Mission system was secularized in 1834 and former Mission lands were granted and/or sold. The Project lies within the area that was formerly occupied by the Rancho Santa Clara del Norte and the Rancho la Colonia. This period was characterized by extensive cattle ranching with some dry farming.

After the end of the Mexican-American War in 1848, the U.S. gained control of California and many of the ranchos were divided. A steady influx of Americans into California ensued. Crops such as wheat and barley (and to a lesser extent olives and oranges) were grown and shipped by sea to other markets. Ranching also continued. Irrigation arrived in 1871 and agriculture became more intensive. By 1900, Point Hueneme was the largest grain shipping port in Southern California (Maritime Discovery 1982).

A real estate boom followed on the heels of the Southern Pacific Railroad's arrival in Ventura in 1887 (Dames & Moore 1988:2-16). Montalvo, Somis, Simi, Moorpark, Oxnard, and Camarillo were all established between 1887 and 1900 (Robinson 1956:21-23). During the 1890s, Ventura was known as the oil county of California and achieved an even greater importance in the 1920s with discoveries of oil near the City of Ventura (Hoover et al. 1966). Several productive oil fields currently remain in operation in the Oxnard Plain (California Oil and Gas Fields 1974).

The City of Oxnard was founded in 1898. During the period from 1913 to 1945, there was extensive regional development and increased diversity in industries, particularly petroleum, entertainment, aircraft, automobile, and agriculture.

Santa Clarita/Newhall

Spanish explorers, missionaries, and settlers began arriving in the late 18th century, and in 1797 the Mission San Fernando Rey de Espana was established, including much

of the Santa Clarita Valley. Following the breakup of the missions in 1834, the land was divided into private ranchos, including the Rancho San Francisco.

Gold was discovered in the mid-1800s and helped launch the California Gold Rush. The valley saw increasing urbanization, although it remained mostly agricultural in nature, with significant ranching. Oil production took off in the late 1800s and saw the construction of the State's first refinery in Newhall. Some of the oil and gold mini-boom towns survive as historical sites today, such as Mentryville.

By 1810, virtually all of the Tataviam had been baptized at San Fernando Mission. By the time the Missions were secularized in 1834, descendants of most of the Tataviam had married members of other groups, and by 1916 the Tataviam language was extinct (King and Blackburn, in Heizer 1978).

Rail and irrigation brought intensive agriculture and more residents to the valley in the late 1800s and early 1900s. The failure of the St. Francis Dam in 1928 devastated the area, but urbanization and development rebounded and continued into the modern era. The valley also became something of a Hollywood backlot during the early and mid-1900s. The City of Santa Clarita was incorporated in 1989, combining many existing communities, including Canyon Country, Newhall, Saugus, and the master-planned Valencia.

4.9.1.3 Literature Reviews and Surveys

Records searches were conducted for the proposed onshore and offshore pipeline routes and facilities areas to identify known, nearby cultural resources. These searches drew from databases of Federal, State, and local agencies and non-governmental organizations (NGOs). Additionally, a geophysical survey of the offshore pipeline route and floating storage and regasification unit (FSRU) anchorage area was conducted in 2004 to identify potential cultural resources not yet included in existing databases. Interviews were also conducted with Ventura Chumash descendants.

Offshore

Records Search

Information on historic shipwrecks was compiled from several sources, including the California State Lands Commission (CSLC) and Minerals Management Service (MMS), in the form of a computerized database of nautical cultural resources (Bureau of Land Management (BLM) POCS 1978; MMS 1987). Additional shipwreck locations were added based on historical information for the Project area obtained from the Ventura County Historical Society, National Ocean Survey (NOS) nautical charts and National Oceanic and Atmospheric Administration (NOAA) Automatic Wreck and Obstruction Survey (AWOIS) Database, United States Coast Guard (USCG), United States Navy Port Hueneme, Records of the Command Historian, and City of Ventura Port District. This information was used in conjunction with geological and oceanographic information to generate expectations regarding the type of submerged cultural resources that may be present in the offshore survey area (FSRU/Pipeline to Ormond Beach).

No evidence of Chumash or Native American watercraft in the offshore environment has been documented in the Project area, and it is considered unlikely that evidence of such fragile craft would be preserved. The earliest shipwrecks documented are of European or American origin. The majority of historic shipwrecks reported in the Project or Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative area are associated with the Hueneme Pier and Ormond Beach landing (c. 1857 to 1938) and Ventura Pier and landing (at foot of Kalorama Street) (c. 1870 to 1929).

Shipwrecks in the vicinity of the Project and Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative are described in Table 4.9-1. Additional shipwrecks not evaluated previously by the MMS are also presented. Only two of these additional vessels (*Kea* and *Congress*) are tentatively considered as moderately significant. There are no downed aircraft reported in the Project area. The Alaska Airlines Flight 261 crash site is more than 8.7 nautical miles (NM) (10 miles or 16.1 kilometers [km]) from any part of the Project.

Geophysical Survey

Fugro Pelagos conducted a geophysical survey along the 20.7-mile (33.3 km) proposed Project pipeline route and at the FSRU anchorage area, incorporating 521 miles (838 km). A review of the geophysical survey was conducted by a qualified marine archaeologist, Jack Hunter, (Fugro Pelagos 2004) to identify features of possible cultural origin that might be impacted during construction or operation of the proposed Project. The review of the 2004 report took into account the current literature including Macfarlane, 1995 and a search of databases for shipwrecks in the area. The Environmental Impact Statement/Environmental Impact Report (EIS/EIR) project team included Heather Macfarlane, a qualified marine archaeologist, who reviewed both the original geophysical survey and the analysis prepared by Mr. Hunter to provide an independent review.

Out of the 202 targets identified by the geophysical survey, one shipwreck and 45 unidentified features were selected as potentially representing possible cultural resources on the seafloor. Twenty-three features (including the shipwreck) are in Federal waters, while the other 23 are within the 3-mile (4.8 km) State waters boundary. Within State waters, a total of 23 unidentified bottom features were observed as potentially human in origin. Of these, four are within 328 feet (100 meters [m]) of the proposed offshore pipeline route. Within Federal waters, there are 23 locations of potential cultural interest; of which, 10 are within 328 feet (100 m) of the proposed pipeline route. Fourteen of these features occur within 328 feet (100 m) of the pipeline or anchoring area and are considered at risk for impacts.

Table 4.9-1 Shipwrecks off Ventura County and Vicinity Documented by State and Federal Databases

Name	Power	Built	Sunk	Cause	Length	Beam	Tons	Latitude	Longitude	Location
Aloha			1952					34º 09'00"N	119º 12'30"W	
Advance			1870	Wrecked			210	34º 16'20"N	119º 17'30"W	
Andrew D	Oil Screw	1937	1953	Burned			116	33º 45'00"N	118º 50'00"W	
Arrow	Oil Screw	1932	1954	Stranded			14			0.4 NM (0.5 mile or 0.8 km) W of Ventura River, Ventura
Caesar Burns	Schooner	1889						34º 08'00"N	119º 13'00"W	
California		1883						34º 09'12"N	119º 13'15"W	
Caroline E Foote		1871						34º 09'00"N	119º 12'30"W	Hueneme, California
Chris C	Oil Screw	1927	1937	Foundered			60	34º 09'00"N	119º 12'30"W	
Cleopatra		1861								Southern California Coast
Congress		1919	1938	Stranded			42			Hueneme, California
Coos Bay	Steam Screw	1884	1914	Wrecked			544	34º 14'00"N	119º 16'00"W	
Crimea	Brig		1876	Stranded				34º 16'20"N	119º 17'30"W	
Dina Lee		1917	1974	Foundered			13			4.3 NM (5 miles or 8 km) SW of Oxnard
Flying A	Oil Screw	1932	1957							Off Ventura
Garey	Oil Screw	1917	1969	Foundered			12			At Ventura Marina, Santa Clara River
Gualala	Schooner		1888	Stranded				34º 16'30"N	119º 17'30"W	
G Marconi	Oil Screw	1928	1931	Burned			100	34º 20'00"N	120º 40'00"W	
Humanity			1939	Wrecked				34º 00'00"N	118º 48'00"W	
James Higgins			1916					34º 16'48"N	119º 16'48"W	
Kalorama	Steam Schooner		1876					34º 16'25"N	119º 17'30"W	
Kea	Gas	1906	1920	Stranded			14			Hueneme, California

Table 4.9-1 Shipwrecks off Ventura County and Vicinity Documented by State and Federal Databases

Name	Power	Built	Sunk	Cause	Length	Beam	Tons	Latitude	Longitude	Location
Kipco Star	Oil Screw	1952	1963				60	34º 08'45'N	119º 12'00'W	
La Jenelle	Steam Screw	1931	1970		466'	60'	7000	34º 08'40'N	119º 12'50'W	
Linde	Oil Screw	1928	1951	Stranded			73	34º 09'00'N	119º 14'30'W	
Liverpool	British Ship		1902	Enroute Antwerp for SF						Wrecked at Channel Islands
Lucy Ann	Brig		1875	Stranded				34º 16'24'N	119º 17'10'W	
Molly	Oil Screw	1919	1969	Foundered						600 feet (183 m) S of S Jetty at the entrance to Channel Islands Harbor, Oxnard
Moonshiner	Oil Screw	1969	1977	Foundered			17			S of Ventura Marina Bkwtr
Olympia	Drg.	1913	1973	Burned			642			Channel Islands Harbor, Oxnard
Pal	Oil Screw	1926	1937	Wrecked			71	34º 13'22'N	119º 15'40'W	
Pan Pacific	Oil Screw	1948	1950	Foundered			226			21.7 NM (25 miles or 40.2 km) offshore of Pt. Dume, at Pt. Mugu Firing Range
Portland	Barkentine	1873	1906				493	34º 09'00'N	119º 14'00'W	
R C Co #2	Scow	1931	1939	Stranded			402	34º 07'16'N	119º 09'48'W	
Saint Croix	Steamship	1895	1909	Burned	240'	40'	1993	34º 00'00'N	118º 45'00'W	
Saint Paul	Steam Screw	1898	1905	Stranded			2440	34º 20'25'N	119º 26'07'W	
Scout		1914	1953	Stranded			14			2.2 NM (2.5 miles 4 km) S Port Hueneme Harbor entrance, broke up on beach
Sea Products	Barge	1912	1927	Foundered			57	33º 58'00'N	118º 48'00'W	Off Pt. Dume

Table 4.9-1 Shipwrecks off Ventura County and Vicinity Documented by State and Federal Databases

Name	Power	Built	Sunk	Cause	Length	Beam	Tons	Latitude	Longitude	Location
#1										
Sierra	Oil Screw	1917	1966	Foundered			23			About 0.2 NM (0.25 mile or 0.4 km) from Channel Islands Breakwater, Oxnard
Sitka			1934					34º 08'00'N	119º 13'00'W	
Sonoma	Oil Screw	1914	1949	Foundered			196	34º 16'30'N	119º 17'30'W	
South Coast										Hueneme, California
Southland	Oil Screw	1936	1960	Foundered			119			About 13 NM (15 miles or 24 km) off Anacapa Island
Spray	Fishing Boat		1939	Capsized				34º 05'00'N	119º 03'35'W	
Stratus			1952							Off Pt. Hueneme
Tritonia	Br. Steamer		1929	Exploded						Buenaventura
W.L. Hardison	Steam Ship		1889	Burned						Off Ventura
Yaquina	Screw	1881	1897	Wrecked				34º 09'00'N	119º 12'30'W	

Sources: California State Lands Commission. Shipwreck Database. March 2003. Department of the Interior, Minerals Management Service, 1987. Archaeological Resource Study: Morro Bay to the Mexican Border. Final Report. Prepared by PS Associates, Cardiff, California under MMS Contract No. 14-12-0001-30272. Outer Continental Shelf (OCS) Study MMS 87-0025.

2

The shipwreck mentioned above, identified in the geophysical survey, is relatively recent and measures approximately 121 feet (37 m) long. Based on its appearance and likely steel hull, it may have been an Alaskan-style fish-processing boat, factory ship, or industrial workboat.

Twenty-six of the 46 targets (56 percent) are classified as "objects," which means they appear to be in one piece and not embedded in the seafloor. It is likely that some may be determined to be of human origin, while some will be found to be of natural origin. Of the potential human objects, a proportion will be modern jetsam while others may be more historically important. Most "objects" are small, usually less than 29.5 by 3.3 feet (9 by 1 m) and often 20 by 3.3 feet (6 by 1 m) or less.

Fifteen targets are characterized as "seafloor features." This classification means that the feature appears to be at least partially embedded in bottom sediment and is thus difficult to distinguish from a rock or sediment outcrop. They tend to have larger sizes than the objects.

Three targets are classified as “reflectors.” The possible identities of these targets are less discernable than those of the other categories.

Onshore

Records Search

An archival records search was first conducted for the Project by the South Central Coast Information Center (SCCIC), California Historic Resources Information System, California State University, Fullerton, Department of Anthropology on December 11, 2002. The Entrix Revised Environmental Assessment documents a second records search conducted December 2, 2003, of the Project and Alternative and Line 225 Pipeline Loop areas at the SCCIC. This search included a review of all recorded prehistoric and historic archaeological sites within a 0.25 mile (0.4 km) of the Project and Alternative and Line 225 Pipeline Loop areas. In addition, a review of listings in the California Historic Landmarks (CHL), the National Register of Historic Places (NRHP), and the California State Historic Resources Inventory (HRI) for the Center Road Pipeline and Line 225 Pipeline Loop areas was conducted. The record search showed that 75 to 80 percent of the Project area was previously surveyed. The majority of areas remaining unsurveyed for the Project are located along the Alternative, with a small portion of unsurveyed area within the Line 225 Pipeline Loop.

Since that time the onshore Project components (proposed pipeline route and alternate pipeline route) have changed location. The location of the Center Road Southern California Gas Company Valve Station and offshore pipeline landing at the Reliant Ormond Beach facility in Hueneme, California have remain unchanged. An update of the records search was completed for the proposed and alternate routes by Archaeologist Heather Macfarlane at the SCCIC in June 2004. Entrix supplied the results of the original records search as well as archaeological site records for the Project for their reviews. The assessment of potential Project impacts is based on this

information and geographic and paleogeographic information compiled for both onshore and offshore elements of the EIS/EIR.

The records search revealed that a total of 19 prehistoric and/or historic archaeological sites or prehistoric isolates were identified within 1 mile (1.6 km) of the Center Road Pipeline, Line 225 Pipeline Loop areas, and their alternatives. Brief descriptions of the sites, their proximity to the proposed alignments, and the potential for impact from construction activities are presented in Tables 4.9-2 through 4.9-6.

Native American Survey

A record search request was submitted to the Native American Heritage Commission (NAHC) in Sacramento, California, to obtain pertinent information regarding prehistoric, historic, and/or ethnographic land use and sites of Native American traditional or cultural value that might be known to exist within the Project areas, as depicted in the Sacred Lands database or other files under NAHC jurisdiction. The NAHC record search did not reveal any Native American sites in the Project vicinity.

Table 4.9-2 Prehistoric and Historic Archaeological Sites – Center Road Pipeline Proposed Route

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
P-56-150013	>1 mile (1.6 km) West	Oxnard Japanese Cemetery	This is a built environment with standing structures	None
P-56-150014	>1 mile (1.6 km) West	Hueneme Masonic Cemetery)	This is a built environment	None
P-56-150022	>1 mile (1.6 km) West	Quonset Hut (1942)	This is a standing structure	None
P-56-150023	>1 mile (1.6 km) West	Blue Gum Tree Grove	Ventura County Landmark (since 1971)	None
P-56-150024	>1 mile (1.6 km) West	Naumann Farm Complex (c. 1940s)	This is a built environment	None
56-10080	1 mile (1.6 km) West	Isolate (Mano) recorded in 1979	Probably collected	None
VEN-726/H	0.75 mile (1.2 km) West	Lithic and historic (c. 1890 to 1912) artifacts	Possible disturbed site or redeposit	None
56-120002	0.75 mile (1.2 km) West	Low density shell scatter recorded in 1979	Probably destroyed	None
56-150018	0.5 mile (0.8 km) West	Wood frame residence (c. 1890)	Standing structure	Potential impact to possible buried historic features (e.g., privy)

Table 4.9-2 Prehistoric and Historic Archaeological Sites – Center Road Pipeline Proposed Route

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
VEN-665	1 mile (1.6 km) West	Three discontinuous concentrations of artifacts and shell	May be associated with VEN-506 (Lopez, 1977; VCAS) to West	None
VEN-918	1 mile (1.6 km) West	Low density shell (*Tivela stultorum*) scatter in narrow soil berm underlying SPRR tracks	May represent historic trash. Located 200 m. south of VEN-666.	None
VEN-666	1 mile (1.6 km) West	Low density artifact and shell scatter	Disturbed by agricultural practices	None
56-100060	1 mile (1.6 km) West	Isolate (Mano)	Redeposit	None
56-150020	1 mile (1.6 km) West	Historic structure	This is a built environment with standing structures	None
56-150021	1 mile (1.6 km) West	Historic structures (1918)	This is a built environment with standing structure	
56-100030	0.75 mile (1.2 km) East	Isolate		None unless alignment is changed
VEN-1205	0.75 mile (1.2 km) East	Small lithic scatter	Near Van Valkenburg's Springville Site	None unless alignment is changed
VEN-223	>1 mile (1.6 km) East	Large habitation site with possible human remains (Becker 1991)	Potentially significant	None unless alignment is changed
VEN-13	0.25 mile (0.4 km) East	Lithic Scatter with two shell fragments (*Chione fluctifraga*) bisected by Beardsley channel	Insignificant	None
56-15007H	0.25 mile (0.4 km) East	Historic Structure	This is a build environment with standing structure	None

1

Table 4.9-3 Prehistoric and Historic Archaeological Sites – Center Road Pipeline Alternative 1

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
VEN-506	<0.5 mile (0.8 km) West	Habitation site with burials	Disturbed by agricultural practices	None
VEN-665	Straddles right-of-way (ROW)	Three discontinuous concentrations of artifacts and shell	May be associated with VEN-506 (Lopez 1977; VCAS) to West	Adverse Impacts
VEN-918	400 feet (122 m) East	Low density shell (*Tivela stultorum*) scatter in narrow soil berm underlying SPRR tracks	May represent historic trash. Located 200 m. south of VEN-666	Possible Impacts
VEN-666	Straddles ROW	Low density artifact and shell scatter	Disturbed by agricultural practices	Adverse Impacts
56-100059	1,200 feet (366 m) East			None
P-56-150013	Adjacent	Oxnard Japanese Cemetery	This is a built environment with standing structures	None
P-56-150014	Adjacent	Hueneme Masonic Cemetery)	This is a built environment	None
P-56-150022	Adjacent	Quonset Hut	This is a built environment	None
P-56-150023	Adjacent	Blue Gum Tree Grove, Pleasant Valley Road	Ventura County Landmark since 1971	None
P-56-150024	400 feet (122 m) South	Farm Complex	This is a built environment	None
56-150020 & 56-150021	500 feet (152 m) West 500 feet (152 m) East	Standing Structure Standing Structure	This is a built environment	None
VEN-726/H	0.75 mile (1.2 km) West of Center Road; N of intersection Demsey and Rice Road	Lithic and historic (c. 1890 to 1912) artifacts	Possible disturbed site or redeposit	None
120002		Shell scattered		

Table 4.9-3 Prehistoric and Historic Archaeological Sites – Center Road Pipeline Alternative 1

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
VEN-1205	1,000 feet (305 m) East	Small lithic scatter		None unless alignment changed
VEN-223	1,400 feet (427 m) East	Large habitation site with possible human remains		None unless alignment changed
VEN-13	1,400 feet (427 m) West	Lithic scatter		None unless alignment changed

1

Table 4.9-4 Prehistoric and Historic Archaeological Sites – Center Road Pipeline Alternative 2

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
VEN-13	100 feet (30.5 m) East	Lithic Scatter with two shell fragments (*Chione fluctifraga*) bisected by Beardsley channel	Insignificant	Potential Impact NA Values

2

Table 4.9-5 Prehistoric and Historic Archaeological Sites – Line 225 Pipeline Loop Proposed Route

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
LAN-823	0.5 mile (0.8 km) West	Chumash Village with nine-burials and grave goods located during trenching; Site recorded in 1975 as a buried site. 1989 site update notes “site location is suspect – site may have been misplotted.”	Site may be destroyed or parts buried on property.	No impact

3

Table 4.9-6 Prehistoric and Historic Archaeological Sites – Line 225 Pipeline Loop Alternative

California Site Inventory Number	Approximate Distance from Alignment	Description	Status	Potential Impact
LAN-823	400 feet (122 m) West	Chumash Village with nine-burials and grave goods located during trenching; Site recorded in 1975 as a buried site. 1989 site update notes "site location is suspect – site may have been misplotted."	Site may be destroyed or parts buried on property.	None
LAN-2190H	500 feet (152 m) West	Historic site		None

A subsequent request for identification of Ventureno Chumash descendants in the Project area was submitted to the NAHC in May 2004. Consultation with Ventura Chumash descendants regarding their perception of specific ethnic impacts took place during July and August 2004.

4.9.2 Regulatory Setting

Major Federal, State, and local laws and regulations relating to cultural resources are identified in Table 4.9-7 below.

Table 4.9-7 Major Laws, Regulatory Requirements, and Plans for Cultural Resources

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
California Environmental Quality Act (CEQA)	• CEQA defines historically significant sites and notes that a lead agency may determine a resource to be historically significant even if not listed on any register. • CEQA provides guidelines for administering to archaeological resources that may be adversely affected by Project development in Section 151226.4. A mitigation plan must be developed for the resource(s). The preferred method of mitigating impacts to archaeological resources is preservation in place. • As modified by AB 952 (Section 21083.2 of the Public Resources Code), CEQA also requires consideration of whether the Project will cause a physical change that would affect important ethnic cultural values. Evaluating the importance of Native American cultural resources requires consultation with affected tribal groups. • Pipeline applications must include a pipeline route survey that is "adequate to determine the presence and location of significant cultural and biological resources" (2016.1(b)(2)).

Table 4.9-7 Major Laws, Regulatory Requirements, and Plans for Cultural Resources

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
California Register of Historical Resources	• The Register provides an authoritative guide to identify the State's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change.
California Public Resources Code	• Section 5097.9 of the California Public Resources Code stipulates that it is contrary to the free expression and exercise of Native American religion to interfere with or cause severe irreparable damage to any Native American cemetery, place of worship, religious or ceremonial site, or sacred shrine.
California Coastal Act Chapter 3 Article 5 Section 30244	• Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.
State Health and Safety Code - *County Coroner, Native American Heritage Commission*	• Section 7050.5 requires that if human remains are exposed during construction, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. The Coroner has 24 hours to notify the NAHC if the remains are determined to be of Native American descent. The NAHC will then contact the most likely descendant of the deceased, who will serve as a consultant as to how to proceed with the remains.
County of Ventura General Plan - *County of Los Angeles General Plan*	• These documents establish policy for protection of cultural resources under their individual jurisdictions.
Archaeological and Historic Preservation Act of 1974 (AHPA)	• AHPA specifically provides for the preservation of historical and archaeological data that might be irreparably lost or destroyed as a result of (1) flooding, the building of access roads, the erection of workmen's communities, the relocation of railroads and highways, and other alternations of terrain caused by the construction of a dam by an agency of the United States or by any private person or corporation holding a license issued by any such agency; or (2) any alteration of the terrain caused as a result of an Federal construction project or federally licensed project, activity, or program. • The requires Federal agencies to notify the Secretary of the Interior when they find that any federally permitted activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data.
Archaeological Resource Protection Act of 1979 (ARPA)	• ARPA states that archaeological resources on public or Indian lands are an accessible and irreplaceable part of the nation's heritage and provides for the following: - Establishes protection for archaeological resources to prevent loss and destruction due to uncontrolled excavations and pillaging; - Encourages increased cooperation and exchange of information between government authorities, the professional archaeological community, and private individuals having collections of archaeological resources prior to the enactment of this Act; - Establishes permit procedures to permit excavation or removal of archaeological resources (and associated activities) located on public or Indian lands; and • The act also defines excavation, removal, damage, or other alteration or defacing of archaeological resources as a "prohibited act" and provides for

Table 4.9-7 Major Laws, Regulatory Requirements, and Plans for Cultural Resources

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
	criminal and monetary rewards to be paid to individuals furnishing information leading to the finding of a civil violation or conviction of a criminal violator.
National Historic Preservation Act of 1966 (as amended) (NHPA)	• NHPA presents a general policy of supporting and encouraging the preservation of prehistoric and historic resources for present and future generations by directing federal agencies to assume responsibility for considering the historic resources in their activities. It ensures the accomplishment of its policies and mandates by: - Authorizing the Secretary of the Interior to establish and maintain a NRHP; - Directing the Secretary of the Interior to approve State preservation programs and designate State Historic Preservation Officers (SHPO) to administer State preservation efforts; - Authorizing a grant program for States for historic preservation projects and individuals for the preservation of listed National Register Properties; - Establishing the Advisory Council on Historic Preservation (ACHP) as an independent Federal agency; - Establishing procedures that Federal agencies must follow in managing federally owned or controlled property and requiring consultation with the ACHP prior to the approval of any undertaking that may harm historic properties; and - Establishing the National Historic Preservation Fund.
Section 106 (16 United States Code [U.S.C.] 470f) of the National Historic Preservation Act of 1966 (80 STAT. 915) *- Advisory Council on Historic Preservation*	• Involved federal agencies must take into account the effect of a project on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP. • If a project will occur that could result in changes to a historic property, the Area of Potential Effects (APE) must be delineated; the potential NRHP eligibility of historic properties within the APE must be evaluated; the effects on eligible or listed NRHP properties must be assessed; and, if the effect is found to be adverse, a Memorandum of Agreement (MOA) must be reached through consultation with the appropriate signatories.
National Environmental Policy Act (NEPA)	• NEPA, as amended, states (Section 101(b)) that it is the continuing responsibility for the Federal government to use all practicable means to preserve important historic, cultural, and natural aspects of national heritage when implementing Federal programs, policies, and decisions. The Act requires compliance with all other applicable Federal laws and statutes.
United States Coast Guard (Homeland Security)	• Under 33 Code of Federal Regulations (CFR) Parts 148, 149 and 150 reconnaissance hydrographic survey is defined as a scientific study of fresh and salt-water bodies, currents and water content, cultural resources, and seabed soils (p. 749). An analysis of the information from the reconnaissance hydrographic survey by a qualified underwater archaeologist is required to determine the historical or other significance of the area where the site evaluation and pre-construction testing activities were conducted (p. 751). This analysis must meet standards established by the MMS for activities on the OCS and include the areas potentially affected by the deepwater port, other associated platforms, and its pipeline routes.

Table 4.9-7 Major Laws, Regulatory Requirements, and Plans for Cultural Resources

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Shipwreck and Historic Maritime Resources Program *- California State Lands Commission*	• The CSLC has jurisdiction over the State's tidal and submerged lands and administers the Shipwreck and Historic Maritime Resources Program (Public Resources Code sections 6309, 6313, and 6314). Cal. Code Regs. Title 2, Div. 3, section 2905; Title 14, Div. 6, section 15306. • Public Resources Code section 6313(a) provides: "The title to all abandoned shipwrecks and all archaeological sites and historic resources on or in the tide and submerged lands of California is vested in the State. All abandoned shipwrecks, all submerged archaeological sites, and submerged historic resources of the State shall be in the custody and subject to the control of the commission for the benefit of the people of the State of California. The commission may transfer title, custody, or control to other state agencies or recognized scientific or educational organizations, institutions or individuals by appropriate legal conveyance."

4.9.3 Significance Criteria

For the purposes of the draft EIS/EIR, cultural resource impacts are considered significant if the Project:

- Violates Federal, State, or local agency cultural resource standards or objectives;
- Causes a substantial adverse change in the significance of an archaeological resource, such demolition or material alteration of the resource itself or its immediate surroundings;
- Causes a substantial adverse change in the significance of a historical resource as defined on the Federal level by its eligibility for listing on the NRHP and on the State level by suitability for listing on the California Register of Historical Resources;
- Directly or indirectly destroys a unique paleontological resource or site or unique geologic feature; and
- Disturbs any human remains, including those interred outside of formal cemeteries.

4.9.4 Impacts Analysis and Mitigation

Impacts and mitigation measures associated with cultural resources are summarized in Table 4.9-8. Applicant-proposed mitigation measures (AMM) and agency recommended mitigation measures (MM) are defined in Section 4.1.

Table 4.9-8 Summary of Cultural Resource Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
Cultural-1: The Project could impact cultural resources in offshore Project areas (Class III).	**AMM Cul-1a. Archaeological surveys** for the purpose of ground truthing would be performed to confirm the location of and gather further information on the submerged objects determined to be subject to potential impact from the Project.
Cultural-2: The Project could impact resources that are of value to Native American culture and heritage, particularly descendents of the Ventura Chumash (Class III).	**AMM Cul-2a. Site Avoidance**. The Applicant would avoid identified sites to the maximum feasible extent, conduct monitoring, and adhere to State of California burial remains legislation as well as Native American Graves Protection and Repatriation Act (NAGPRA). **AMM Cul-2b. Native American Values.** Monitoring disturbance of archaeological sites, curation of artifacts, implementation of specified procedures, minimization of impacts to native plants.
Cultural-3: The Project could impact cultural resources in onshore Project areas (Class III).	**AMM Cul-3a. Site Avoidance/Protection/ Analysis.** Adverse impacts would be mitigated by site avoidance, site protection, and collection, analysis, and documentation of data from the site so that important research questions may be addressed. **AMM Cul-3b. Surveys.** Pedestrian surveys would be conducted by a qualified archaeologist prior to all ground-disturbing construction activities along parts of the alignments that have not been previously surveyed in order to complete the inventory of archaeological sites. **AMM Cul-3c. Native American Representative.** Surveys within the City of Oxnard would include the presence of a Native American Representative as mandated by City guidelines. **AMM Cul-3d. Survey Areas.** Several areas would be surveyed on the Center Road Pipeline Route before issuance of permits. **AMM Cul-3e. Pedestrian Survey.** A pedestrian survey would be conducted in specific areas in the Line 225 Pipeline Loop. **AMM Cul-3f. Monitoring.** A qualified archaeologist would monitor all construction within 328 feet (100 m) of archaeological sites and areas with high potential for the occurrence of sites buried under alluvium. **AMM Cul-3g. Cultural Resources Management Plan.** To ensure compliance with mitigation measures, a cultural resources management plan (CRMP) would be developed pursuant to all relevant local, State, and Federal cultural resources guidelines and criteria.

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4.9.4.1 Offshore

Impact Cultural-1: Marine Archaeological Sites and Artifacts

The Project could impact cultural resources in offshore Project areas (Class III).

FSRU installation, offshore pipeline construction, and ship anchoring could alter, disturb, or destroy historic or archaeological resources located on the seafloor or within seafloor sediments. Fourteen of these locations occur within 328 feet (100 m) of the pipeline and 984 feet (300 m) of the FSRU anchoring array and are considered at potential risk for impacts. Although potential objects on the seafloor have been avoided in route selection, a ground-truthing survey focused on the potential objects of human origin would ensure that all archaeological resources have been adequately located so that they can be avoided.

The Alaska Airlines Flight 261 crash site is more than 8.7 NM (10 miles or 16 km) from any part of the Project; thus no impacts to it would be expected. It is not anticipated that impacts above significance criteria levels would result.

The following is included in the Applicant's proposed project:

AMM Cul-1a. **Archaeological surveys** for the purpose of ground truthing would be performed to confirm the location of and gather further information on the submerged objects determined to be subject to potential impact from the Project. Shipwrecks or other underwater cultural resources identified as culturally significant would be avoided. Pipeline-laying barges would use dynamic positioning rather than anchoring at locations along the route to avoid impacts on potential cultural resources.

Mitigation Measure for Impact Cultural-1: Maritime Archaeological Sites and Artifacts

With the implementation of this measure, this impact would be reduced to a less than significant level.

4.9.4.2 Onshore/Offshore

Impact Cultural-2: Native American Values

The Project could impact resources that are of value to Native American culture and heritage, particularly descendents of the Ventura Chumash (Class III).

The NAHC record search did not reveal any Native American sites in the Project vicinity. However, during consultations with Ventura Chumash descendants regarding their perception of specific ethnic impacts, concerns over Project impacts on undocumented sites and artifacts in the Project area were expressed. During Project construction a previously unidentified site could be encountered and damaged.

The Applicant has incorporated the following measures into the Project:

AMM Cul-2a. **Site Avoidance**. The Applicant would avoid identified sites to the maximum feasible extent, conduct monitoring, and adhere to State of California burial remains legislation as well as NAGPRA.

AMM Cul-2b. **Native American Values.** Additional mitigation measures for impacts on Native American values would include the following:

- Native American monitoring of Project-related activities that result in disturbance of surface and subsurface components of archaeological sites;
- Curation of artifacts recovered from archaeological sites at a qualified facility that allows access to Native Americans;
- Implementation of procedures specified in CEQA 15064.5(e) and Health and Safety Code Section 7050.5 and Public Resources Code 5097.98 if human remains are discovered in the Project area; and
- Avoidance of adverse impacts to oak trees and other plants and animals of local Native American concern. Impacts to native plants would be minimized by allowing collection of herbs before construction and by relocating and replanting grasses; and if resource location is unavoidable during construction or maintenance of the FSRU and pipeline, further investigations in the form of complete documentation and possible excavation and/or data recovery would be implemented. All such investigations would include Native American participation where mandated by local, State, and Federal law.

Mitigation Measures for Impact Cultural-2: Native American Values

No additional mitigation measures are required. With the implementation of these measures the impacts would be less than significant.

4.9.4.3 Onshore

Impact Cultural-3: Terrestrial Historic or Archaeological Resources

The Project could impact cultural resources in onshore Project areas (Class III).

Based on the location of documented sites, the Project will result in no adverse impacts to documented prehistoric and historic site locations. However, Project activities may result in adverse impacts to archaeological resources not yet documented. Ground-disturbing activities, including trench excavation, preconstruction ditching, grading, horizontal boring, and horizontal directional drilling (HDD), all have the potential to impact cultural resources. Areas sensitive for surface disturbance include parking and

equipment staging areas and access easements. Indirect impacts could also occur and are defined as those associated with increased accessibility of cultural resource sites to artifact collectors or vandals and introduction of visual elements that may compromise the integrity of an important setting or historic or traditional values.

No impacts are expected to occur during maintenance and operations. Activities associated with pipeline abandonment that could potentially affect cultural resources would include removal of facilities, regrading, refilling, and revegetation.

There are several areas where direct and indirect impacts on cultural resources could occur. The shoreline in the Project area probably provided an attractive seasonal subsistence resource for early inhabitants, and the historically high water table in the past suggests that many springs probably occurred throughout the area in prehistoric times (Thomas et al. 1956). The areas adjacent to these water bodies and near springs are evaluated as having a high probability for the occurrence of prehistoric sites and artifacts; thus the shoreline crossing at Ormond Beach may be an area of cultural resource sensitivity.

Other areas of potential sensitivity include those northward of Beardsley Wash, as they are characterized by numerous relic "barrancas" (streams and washes), which historically crossed through the Project, and alternative pipeline alignments. Many have now disappeared. Rose Avenue (or Ditch Road) and areas adjacent to Beardsley wash have both shown evidence of buried prehistoric sites with burials and/or artifacts.

The applicant has incorporated the following measures into the Project:

AMM Cul-3a. **Site Avoidance/Protection/Analysis.** Adverse impacts would be mitigated by site avoidance, site protection, and collection, analysis, and documentation of data from the site so that important research questions may be addressed. All sites within the Project area would be identified before issuance of Project permits so that avoidance would be achieved by Project redesign.

AMM Cul-3b. **Surveys.** Pedestrian surveys would be conducted by a qualified archaeologist prior to all ground-disturbing construction activities along parts of the alignments that have not been previously surveyed in order to complete the inventory of archaeological sites. Surveys would be completed pursuant to Federal, State, and county standards and guidelines, including surveys for access roads and/or interconnection pipelines and areas determined to be potentially sensitive for the occurrence of sites in natural areas where there is a high potential for sites to be buried under alluvium (i.e., floodplains in vicinity of relic barrancas, streams, and creeks), and surveys for Project redesign.

AMM Cul-3c. **Native American Representative.** Surveys within the City of Oxnard would include the presence of a Native American

Representative as mandated by City guidelines. If avoidance of identified resources through pipeline realignment is not feasible, additional archaeological investigations to evaluate the nature, extent, and integrity of the resources would be implemented and would include a program of data recovery to reduce impacts.

AMM Cul-3d. **Survey Areas.** Areas to be surveyed on the Center Road Pipeline route prior to issuance of Project permits include the following:

- Coastal dune and adjacent areas about 1.5 miles (2.4 km) from Milepost (MP) 0.0 to Hueneme Road;
- Approximately 2 miles (3.2 km) from Hueneme Road north to Pleasant Valley Road;
- Approximately 2 miles (3.2 km) from Pleasant Valley Road to the intersection of Del Norte Boulevard and Sturgis Road;
- The area of the Main Line Block Valve Safety;
- Approximately 1 mile (1.6 km) along Sturgis Road between Del Norte Boulevard and Rice Road;
- Approximately 1.5 miles (2.4 km) from Beardsley Road to Santa Clara Road;
- Approximately 1 mile (1.6 km) from Los Angeles Avenue north to the intersection of Los Angeles Avenue and Las Vista Road; and
- 0.25 mile (0.4 km) west from the intersection of La Vista Road and Center Road including unsurveyed area of the Center Road Valve Station.

AMM Cul-3e. **Pedestrian Survey.** In the Line 225 Pipeline Loop area, the pedestrian survey would be conducted in the following areas:

- From about 500 feet (152 m) east of MP 2 and extending about 0.4 mile (0.6 km) along an unnamed drainage route;
- Along both sides of the Santa Clara River extending from both banks of the river about 328 feet (100 m);
- From MP 7 to its endpoint at MP 7.71; and
- Unsurveyed parts of the Quigley and Honor Ranch Valve Stations.

AMM Cul-3f. **Monitoring.** A qualified archaeologist would monitor all construction within 328 feet (100 m) of archaeological sites and areas with high potential for the occurrence of sites buried under alluvium. If sites are identified during the monitoring phase of construction, the archaeologist will be empowered to stop all

construction activities in the vicinity of the find and evaluate the resource. Such evaluation would require a Phase 2 subsurface testing and evaluation program. If remains prove to be significant and site avoidance cannot be implemented through Project redesign, a Phase 3 data recovery program would be implemented to mitigate impacts.

AMM Cul-3g. **Cultural Resources Management Plan.** To ensure compliance with mitigation measures, a cultural resources management plan (CRMP) would be developed pursuant to all relevant local, State, and Federal cultural resources guidelines and criteria.

Mitigation Measures for Impact Cultural-3: Terrestrial Historic or Archaeological Resources

With the implementation of these measures, impacts would be less than significant.

4.9.5 Alternatives

4.9.5.1 No-Action Alternative

Under this alternative, the impacts described in this section would not occur.

4.9.5.2 Alternative Deepwater Port (DWP) - Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline

This alternative would result in similar impacts from the proposed Project. A cultural resources survey along a similar offshore pipeline route did not identify potential cultural resources that could be impacted (Dames and Moore January 24, 1980). If this alternative is selected, a specific cultural resources survey would be required and avoidance of all significant cultural resources would ensure that impacts would be similar to the proposed Project. The landfall in this alternative would be at the Reliant Energy Mandalay Generating Station, whose cultural setting is comparable to that of the Reliant Energy Ormond Beach Generating Station. No historic structures or structures eligible for registry are within 1 mile (1.6 km) of the site. The moderate difference in landfall location would not be expected to materially alter impacts on cultural resources.

4.9.5.3 Alternative Onshore Pipeline Routes

Center Road Pipeline Alternative 1

This alternative would cross two shell and artifact scatter sites and run within 400 feet (122 m) of a third, with possible adverse impacts. Consequently, this alternative would be expected to increase impacts on cultural resources relative to the Project.

Center Road Pipeline Alternative 2

This alternative would avoid the one cultural site possibly impacted by the proposed route. However, this alternative comes within 100 feet (30.5 m) of a small lithic scatter

site that might be of some Native American historic and cultural value. Consequently, this alternative would not be expected to reduce cultural resource impacts relative to the Project.

Line 225 Pipeline Loop Alternative

The potential impacts on cultural resources would be similar to those of the proposed route. The area to be surveyed along the Line 225 Pipeline Loop Alternative prior to issuance of permits includes a 328-foot (100 m) swath along both sides of the Santa Clara River.

4.9.5.4 Alternative Shore Crossings and Pipeline Connection Routes

Point Mugu Shore Crossing/Casper Road Pipeline

An archival search of information on cultural resources maintained by the California Historical Resources Information System at California State University, Fullerton, California, was performed. The results of the archival search revealed that there are no documented archaeological sites located on the pipeline route. Two archaeological sites (56-000555A and 56-000555B) were identified within a 0.25 mile (0.4 km) radius of the Project site. One isolate was also identified within 0.25 mile (0.4 km) of the Project site (56-100156) although no isolates were identified along the pipeline route.

Five additional cultural resources are located within a 0.25 (0.4 km) mile radius of the route and three of these are located along the route. The Project would avoid these properties.

The same mitigation measures associated with the proposed Project would be applicable to this alternative. With the implementation of these measures the impacts would be reduced to less than significant levels. Therefore, the cultural resources impacts would be similar to the proposed Project.

Arnold Road Shore Crossing/Arnold Road Pipeline

This alternative is adjacent to the Point Mugu Shore Crossing and the results of the cultural resources archival search were the same. The same mitigation measures associated with the proposed Project would be applicable to this alternative. With the implementation of these measures the impacts would be reduced to less than significant levels. Therefore, the cultural resources impacts would be similar to the proposed Project.

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